Capstone Project Submission

Team Member's Name, Email and Contribution:

Name: Pranjal Chaudhary

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Contribution: a) Performed the data analysis of churn rates, network usage, international call plans, voice mail plans and customer service calls. and prepared visualizations for it.

b) Prepared the PowerPoint presentation.

c) Prepared the technical documentation.

Please paste the GitHub Repo link.

GitHub Link: https://github.com/PranjalChaudhary/EDA-1-Telecom-Churn-Analysis

Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)

Problem Statement:

We were provided with the churn data set for Orange S.A. a telecom company, and were asked to do data analysis to find reasons for churn and come up with suggestions to reduce it.

Approach:

In the first phase, we performed data cleaning by checking for any null and duplicated values, checked their data types, determined the data set's descriptive statistics, and added new features to help in the analysis.

We explored the demographic distribution of data based on customers' location and network usage, determined how severe the churn problem is, and explored the correlations between churn and different features to look out for any determining factors.

Summary:

Network Usage:
The state of California has the least amount of network usage while the maximum usage is in the state of West Virginia.
Company Churn Rate:
The company has a churn rate of 14.5 %
State wise Churn:
The states of Maryland (MD), Michigan (MI), Minnesota (MI), New Jersey (NJ), and Texas (TX) are among the states with high user churning rates. while Alaska (AK), Hawaii (HI) and Idaho (ID) are among the states with low churning rates.
Customer Service Calls:
The data shows that customer retention decreases with increase in number of customer service calls. The states AR., GA are among the states with the highest customer service calls on average.
Day Time Charges:
Customers are being charged nearly 3 and 4 times for their day calls as compared to night and evening calls and nearly 6% more users who spend more than the average amount on daytime calls have left the network compared to users who don't.
Voice Mail Plan:
Churn percentage for users who opted for the voice mail plan is half that of users who did not.
International Plan:
The customers with international plans are being charged the same amount per minute as those users without the plans. Nearly 40% of users who opted for the international plans ended up leaving the network

Conclusions:

After the EDA of the dataset, we can see that the company does face an issue of high churn rates, with nearly 15 % of customers having left the network. Some correlation was observed between customer service calls and churn, indicating a need to focus on improving problem resolution speed. Another area that can improve is how much the customers are being charged for their daytime calls, as nearly 6% more users who spend more than the average amount on daytime calls have left the network compared to users who don't. Also, we observed that customers were being charged the same amount for their international calls per minute irrespective of whether they had opted for the international plan, which led to nearly 40% of customers with international plans leaving the network.
On the other side, the customer churn percentage was nearly half for customers who opted for the voice mail plan compared to customers who didn't.